

**To:** Wharton, Steve[Wharton.Steve@epa.gov]  
**Cc:** Gilbert, Edward[Gilbert.Edward@epa.gov]; Peterson, Cynthia[Peterson.Cynthia@epa.gov]; Gray, David[gray.david@epa.gov]; Williams, Laura[williams.laura@epa.gov]  
**From:** Harris-Bishop, Rusty  
**Sent:** Fri 9/11/2015 8:16:30 PM  
**Subject:** RE: Effectiveness of Settling Ponds/Treatment System at GKM?

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>>>>>>  
Yes, thanks for that fish tissue information!

I'll check with the Env. Unit and see what we can get regarding sampling results.

Thanks, and have a great weekend!

Rusty



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**From:** Wharton, Steve  
**Sent:** Friday, September 11, 2015 1:12 PM  
**To:** Harris-Bishop, Rusty  
**Cc:** Gilbert, Edward; Peterson, Cynthia; Gray, David; Williams, Laura  
**Subject:** RE: Effectiveness of Settling Ponds/Treatment System at GKM?

Rusty – I believe the folks in the ICP are best equipped to answer your question regarding the effectiveness of the water treatment at the mine proper. I know we have water quality data at the GKM portal and at the discharge from the treatment ponds (now near the Red & Bonita Mine), so we could calculate a percent reduction in metals content at the point of treatment, which is ongoing. The percent reduction calculations for locations farther downstream do not necessarily reflect the effectiveness of the treatment at the mine, due to other contributing factors throughout the watershed, such as precipitation and runoff events or fluctuations in discharges from other loading sources. The reductions in metals concentrations in the water column reflect a return to pre-incident conditions, which have been and will continue to be influenced by ongoing sources throughout the watershed.

The fish tissue data and narrative from Colorado Parks and Wildlife I forwarded earlier

might be helpful for Mathy's briefing materials.

Hope this helps,

Steve

**From:** Harris-Bishop, Rusty

**Sent:** Friday, September 11, 2015 12:05 PM

**To:** Wharton, Steve

**Subject:** Effectiveness of Settling Ponds/Treatment System at GKM?

Hi Steve:

Have we done any sampling of the effectiveness/percent reduction in metals of the GKM discharge? I know we had our folks do some comparisons of metals reductions at the Rotary Park sampling location, based on some time series plots Region 8 did. For Mathy's testimony next week, it would be good for him to have some facts about the effectiveness of our temporary measures, since there has been testimony that the release is continuing and that our treatment/settling pond system is ineffective.

Here is what we put together on a percentage reduction basis, which can only be partially attributable to the treatment system, I think:

Region 8 provided a time series plot from 8/6-8/12 for the Rotary Park Site on the Animas in Durango. Here are some estimated percent improvements in key metals in SW from the peak of the plume to the following day (8/8 in almost all cases).

Metal, percent remaining, percent reduction

Al	0.01300813	98.7%
Fe	0.00628099	99.4%
As	0.00211429	99.8%
Pb	0.00381679	99.6%
Mg	0.07518797	92.5%
Zn	0.027	97.3%
Cu	0.00810127	99.2%

Let me know if you have any additional information we can include in Mathy's briefing package.

Thanks!

Rusty



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